

WHAT IS CLAIMED IS:

1/ An electric rotary machine comprising:

- a casing of elongate shape;
 - a rotor having a shaft capable of turning inside
- 5 the casing about an axis of rotation; and
- a fan rotated by the rotor;

wherein the casing includes at least one air inlet grid and at least one air outlet grid, both of which are made integrally with the casing.

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2/ A machine according to claim 1, wherein the casing is made as a casting.

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3/ A machine according to claim 2, wherein the casing is made out of injected aluminum.

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4/ A machine according to claim 2, wherein the casing has a flange at a first longitudinal end, and has a perforated end wall at a second longitudinal end opposite from the first, the end wall being made integrally with the casing and forming the air inlet grid.

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5/ A machine according to claim 4, wherein the flange is made integrally with the casing.

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6/ A machine according to claim 4, wherein the end wall includes a portion in relief on an inside face serving to fix a brush carrier.

7/ A machine according to claim 6, wherein the portion in relief comprises a slideway, and wherein the brush carrier is configured to be capable of sliding in the slideway while being mounted in the casing.

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8/ A machine according to claim 1, wherein the casing has two side grids made integrally with the casing and situated respectively on the left and right sides of the

casing when the alternator is observed along the axis of rotation of the rotor.

5 9/ A machine according to claim 1, wherein the casing includes at least one volute opening out to a grid.

10 10/ A machine according to claim 1, wherein the casing has at least one grid including bars, each having a longitudinal axis extending substantially parallel to a plane perpendicular to the axis of rotation of the rotor.

11/ A machine according to claim 10, wherein the bars present a radially inner side that is machined.

15 12/ A machine according to claim 1, wherein the casing includes extensions for supporting a cover, said extensions including air inlet openings, the casing having at least one opening opening out to the inside of the cover to enable air to be sucked in beneath it when
20 the alternator is in operation.

25 13/ A machine according to claim 1, wherein the casing includes non-machined axial splines against which a stator rests.

30 14/ A machine according to claim 1, wherein the casing comprises a cylindrical body and a flange, the flange having passages for fixing elements having axes situated radially outside the envelope of the cylindrical body.

15/ A machine according to claim 1, constituting an alternator.